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10/662,445

09/16/2003

Martin J. Agan

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EXAMINER

GEBRIEL, SELAM T

ART UNIT

PAPER NUMBER

2622

MAIL DATE

DELIVERY MODE

06/09/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed on 05/20/2009 have been fully considered but they are not persuasive.

Applicant argued on page 10 and 11, Here, Compton teaches away from globally resetting all pixels of an array as disclosed in Afghahi. The Office Action accurately states that Compton does not disclose simultaneously resetting all pixels of an array to begin a first integration period. Office Action at 5. The Office Action attempts to cure Compton's deficiency by modifying it with Afghahi's teaching of globally resetting all pixels of the array. However, Compton specifically teaches incrementally resetting rows of pixels in synch with a mechanical shutter. Compton at ¶ 0019. Compton expressly states that it performs incremental resetting for the express purpose of avoiding a global reset. Compton at ¶ 0005, 0008. Compton states, "the present invention has the following advantages without using electronic global shutter" (emphasis added). Compton ¶ 0008. That is, the purpose of Compton's disclosure is not to use a global reset. Applying a global reset to Compton would be antithetical to the purpose and disclosures of Compton because Compton teaches away from simultaneously resetting all pixels of an array. Combining the global reset of Afghahi with the disclosure of Compton is non-obvious for at least these reasons. Applicant respectfully requests that the rejection be withdrawn and the claims allowed.

The examiner respectfully disagrees. The examiner used the resetting method of Afghahi to modify Compton. Compton specifically teaches incrementally resetting rows

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of pixels in sync with a mechanical shutter. Compton in paragraph 0019 expressly states that it performs incremental resetting for the express purpose of avoiding a global reset. **thereby avoiding the shortcomings of global shutter** such as floating diffusion dark current, non correlated double sampling, and non-linearity of photo response. In paragraph 0019 Afghahi discloses pixel sensor array comprising a pixel cell 240 as shown in figure 2, wherein all the pixels of the array of which pixel 240 is a part are globally or simultaneously reset. Afghani uses the method of global resetting to control or reduce the amount of blur or ghosting images in the captured image by reducing the negative potential photographic effects of potential movement of objects within that picture frame of time while the image is taken. One ordinary skilled in the art would combine Compton's pixel array structure as shown in figure 2 and a global resetting technique as taught by Afghahi to control or reduce the amount of blur or ghosting images in the captured image by reducing the negative potential photographic effects of potential movement of objects within that picture frame of time while the image is taken. One ordinary skilled in the art can design a sensor that has shortcomings of global shutter such as floating diffusion dark current, non correlated double sampling, and non-linearity of photo response but has an advantage of controlling or reducing the amount of blur or ghosting images in the captured image by reducing the negative potential photographic effects of potential movement of objects within that picture frame of time while the image is taken. Therefore it's the choice of the designer of the sensor array whether to use the method of row by row resetting or global resetting and it will be obvious to one ordinary skilled in the art at the time the invention was made to modify

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the pixel array of Compton with a the reset operation of the active pixel sensor taught by Compton with a well know reset method of global or simultaneous reset and as taught by Afghahi to simultaneously reset the photodiode of each pixels. The applicant argued that Compton teaches away from simultaneously resetting all pixels of an array. Combining the global reset of Afghahi with the disclosure of Compton is non-obvious. The examiner disagrees for the reason stated above.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to SELAM T. GEBRIEL whose telephone number is (571)270-1652. The examiner can normally be reached on Monday-Friday 7:30 am - 4:00 pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tran Sinh can be reached on 571-272-7564. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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/Tuan V Ho/

Primary Examiner, Art Unit 2622

/Selam T Gebriel/

Examiner, Art Unit 2622